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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
Amendment of Parts 2, 22, 90 and 94 of the Commission's Rules and Regulations to Permit Routine Licensing and Use of Bi-Directional Signal Boosters	)	WT Docket No. 95-70 RM-8200

COMMENTS OF ANDREW CORPORATION

Andrew Corporation ("Andrew"), by its undersigned counsel, hereby submits these comments in support of the Commission's proposal to permit licensees to routinely use signal boosters in common carrier paging operations, land mobile radio and paging operations, and multiple address system operations.[1] Andrew commends the Commission for recognizing the merit of TX RX Systems, Inc.'s Petition for Rulemaking[2] to expand the routine use of bi-directional signal boosters.

As detailed in Andrew's *Ex Parte* comments on the Petition, "liberalized use of bi-directional signal boosters [ ] is necessary to accommodate the increasing market demand for ubiquitous radio signal coverage in shielded environments."[3] Andrew believes that allowing routine use of signal boosters for Part 22 common carrier paging operations, Part 90 land mobile radio and paging operations, and Part 94 multiple address system operations strikes the

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[1] *Notice of Proposed Rulemaking*, WT Docket No. 95-70, RM 8200 (released June 22, 1995).

[2] *Petition for Rulemaking*, RM-8200, (filed February 25, 1993) ("Petition").

[3] *Ex Parte Comments of Andrew Corporation*, RM 8200 (filed April 8, 1994) at 1-2.

appropriate balance between the industry's need to meet customer demands for ubiquitous radio signal coverage and the Commission's need to minimize the potential for harmful interference to proximate radio operations. Accordingly, Andrew urges the Commission to adopt this Notice.

I. STATEMENT OF INTEREST

Andrew is a well-established and internationally renowned designer, manufacturer and supplier of electronic radio communications products and services. Andrew's customers include cellular and private land mobile operators, common carriers, private microwave users and the broadcast industry. Specifically, Andrew designs and manufactures a broad line of products for the radio communications industry including signal boosters and distribution amplifier products for both the public and private land mobile industry. Consequently, Andrew is intimately familiar with the technology of signal boosters and their use in the marketplace.

II. THE NOTICE

As detailed in the Notice, signal boosters generally provide additional signal coverage in areas where the normal, non-boosted signal would be adequate if there were no obstructions preventing reception of the radio signal. The signal boosters do not boost the radio signals outside of the coverage area, but merely amplify the signal to eliminate deadspots within the coverage area. Unless a waiver is obtained, signal boosters currently may be used only in airports or in cellular systems. Consistent with TX RX's Petition, the Commission proposes to permit routine use of signal boosters in other Part 22, Part 90, Part 94 services.

Further, the Commission proposes to define boosters as " a device that automatically receives, amplifies and retransmits on a one-way or two-way basis, the signals received from

base stations, mobile, portable units, with no change in frequency or authorized bandwidth."[4] Under this definition, signal boosters would be further classified either as narrowband (Class A)[5] or broadband (Class B).[6] Broadband signal booster users would be responsible for eliminating any harmful interference caused to adjacent radio systems. To further minimize the likelihood of interference, the Commission proposes to limit the total output power to 500 mw.[7] Lastly, as requested by TX RX, the Commission proposes to allow current Part 22, Part 90 and Part 94 licensees to operate type-accepted signal boosters without obtaining separate authorization from the Commission.

III. EXPANDING THE PERMISSIBLE USE OF SIGNAL BOOSTERS SERVES THE PUBLIC INTEREST.

A. The Improved Technology of Signal Boosters Virtually Eliminates the Likelihood of Harmful Interference.

In Andrew's view, the routine use of type-accepted signal boosters in a variety of radio services would serve the public interest by allowing system designers to efficiently deploy systems that offer ubiquitous coverage. As detailed in Andrew's *Ex Parte* comments, the rationale for limiting the routine use of signal boosters -- harmful system interference -- has been virtually eliminated as a result of technological advancements in the amplification of radio

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[4] *Id.* at ¶ 6.

[5] Narrowband signal boosters amplify only those discrete frequencies intended to be transmitted.

[6] Broadband signal boosters amplify all frequencies that are received within boosters passband.

[7] The output power would be determined by dividing the total available booster power by the number of authorized frequencies (channels) that the booster is retransmitting. Notice at ¶ 8.

signals. Recent developments in output level control circuitry further assure that signal booster output will remain within the Commission's spurious emission specifications.

Andrew concurs with the Commission that "signal boosters have proven to be a viable and practical way to resolve signal coverage problems caused by natural or man-made obstacles thereby allowing licensees to make maximum use of radio systems."[8] Further, Andrew believes that the proposed relaxed regulatory scheme would facilitate the cost effective and timely coverage of shadowed and blocked areas without compromising the integrity of proximate radio systems. Accordingly, Andrew urges the Commission to adopt expeditiously its proposal to permit licensees to routinely use signal boosters in Part 22 common carrier paging operations, Part 90 land mobile radio and paging operations, and Part 94 multiple address system operations.

B. Licensees of Broadband Boosters Should Be Responsible for Eliminating Harmful Interference.

Consistent with its *Ex Parte* comments, Andrew concurs with the Commission's proposal to make broadband (Class B) signal booster licensees responsible for eliminating harmful interference. In contrast to narrowband (Class A) signal boosters that only amplify specific signals, broadband (Class B) signal boosters which utilize different technology, amplify all radio signals in their vicinity thereby increasing the potential for interference. Andrew believes that requiring broadband signal booster users to resolve any harmful interference is equitable, particularly since Class B signal boosters are typically used in closed environments where there is little potential for such interference. In light of the economic benefits to consumers and the

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[8] *Id.* at ¶ 5.

increasing customer demand for ubiquitous signal coverage, Andrew believes that this approach to resolving potential interference from Class B signal boosters is effective and reasonable.

C. The Proposed 500mw Total Power Output for Class B Boosters is contrary to the Public Interest.

Andrew opposes strongly the Commission's proposal to limit total output power of a booster to 500 mw. Based on Andrew's experience, 500mw of total output power simply does not provide sufficient power to fill-in an area without using multiple boosters that would increase the overall likelihood of system interference and cost of a system. Further, as a practical matter, Andrew does not manufacture boosters with such low power because customers have expressed their need for stronger signal boosters.

To the extent the Commission is concerned about spurious emissions causing system interference, Andrew proposes that the Commission limit to 500mw the power output "per RF channel" rather than the total output power. Alternatively, Andrew urges the Commission to adopt specific spurious and intermodulation related emissions limits for Class B signal boosters similar to conducted and radiated emissions limits adopted for other radio equipment. *See generally* Part 90. Andrew believes that this approach will minimize the likelihood of system interference and allow signal boosters to meet consumer needs in a cost efficient manner.

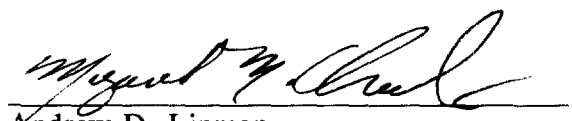
IV. CONCLUSION

The Commission has not visited the issue of the routine use of signal boosters outside of cellular systems and airports in over 20 years. In Andrew's view, significant technological developments, changes in use and the resulting user expectations suggest that the time has come to adopt regulations that accurately reflect the current state of signal booster technology.

Accordingly, Andrew unequivocally urges the Commission to adopt this Notice and expand the vroutine use of signal booster systems to the private land mobile radio service, the common carrier paging service and the Private Operational Fixed Microwave Service.

Respectfully submitted,

ANDREW CORPORATION



Andrew D, Lipman
Margaret M. Charles

SWIDLER & BERLIN, CHARTERED
3000 K Street, N.W., Suite 300
Washington, DC 20007-5116
(202) 424-7654

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